



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,017	07/23/2003	John David Heinzmann	1062/D20	8423
2101	7590	03/03/2005	EXAMINER	
BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618			HE, AMY	
			ART UNIT	PAPER NUMBER
			2858	

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	10/625,017		HEINZMANN ET AL.	
	Examiner		Art Unit	
	Amy He		2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/23/2003</u> .   | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pugh (U. S. Patent No. 6, 486,626), in view of Dowling et al. (U. S. Patent No. 6, 308,140).

Referring to claims 1-2, Pugh discloses a method for detecting an open winding condition in a motor, the method comprising:

- a. measuring a winding voltage( column 2, lines 44-45);
- b. calculating a residue voltage for the winding, the residue voltage equaling the difference between a measured voltage drop across the winding and a calculated voltage drop (nominal expected voltage, column 2, lines 47-48) for the winding, the voltage drop calculated for a non-open winding condition (column 2, lines 44-54);
- c. comparing the residue voltage to a threshold value (column 2, lines 52-54);
- d. signaling (by generating an error signal, column 2, lines 52-53 and lines 64-67) when the residue voltage exceeds the threshold value, to declare an open winding condition.

Still referring to claims 1-2, Pugh does not specifically disclose measuring a winding current and a motor speed.

Dowling et al. (U. S. Patent No. 6, 308, 140) discloses measuring a winding current and a motor speed (column 3, lines 3- column 4, line 67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Pugh to measure a winding current and a motor speed, as taught by Dowling, for the purpose of detecting motor winding fault.

Referring to claims 3-5, Pugh in view of Dowling discloses a method for detecting an open winding condition in a motor as in claims 1-2. Pugh in view of Dowling does not specifically disclose duplicating the measuring and computing steps for a second stator winding in the motor; and comparing a residual voltage difference between the first and second residual voltages; and signaling when the residue difference exceeds the threshold value to declare an open winding condition.

A person of ordinary skill in the art would find it obvious at the time the invention was made to further modify Pugh to disclose duplicating the measuring and computing steps for a second stator winding in the motor, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *See St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. In addition, with the first and the second residue voltages available, a person of ordinary skill in the art would find it obvious to compare the residue voltage difference between the two residue voltages to the threshold value, in order to detect any discrepancy between the two residue voltages for signaling a fault in the winding of the motor.

Referring to claim 6, Pugh in view of Dowling discloses compensating for measurement delay (see step 70 in Figure 3 of Dowling reference).

**Conclusion**


2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230.

The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH  
February 18, 2005.

  
**ANJAN DEB**  
**PRIMARY EXAMINER**